



STATE OF ALABAMA  
DEPARTMENT OF FINANCE  
DIVISION OF PURCHASING

INVITATION TO BID

INVITATION TO BID NO: 09-R-2208649

REQ. AGENCY : 012035  
ALA DEPT OF TRANS - 6TH DIVISION  
AGENCY REQ. NO. : 604-961465  
T-NUMBER :  
DATE ISSUED : 07/21/09  
VENDOR NO. :  
VENDOR PHONE NO. :  
SNAP REQ. NO. : 1418484  
BUYER NAME : PAT ANTLE

FOR: VIDEO TRAFFIC SURVEILLANCE SYSTEM

BUYER PHONE NO. : (334) 242-7253-  
PURCHASING PHONE NO: (334) 242-7250

BID MUST BE RECEIVED BEFORE:  
DATE: 08/11/09 TIME: 5:00 PM

BIDS WILL BE PUBLICLY OPENED:  
DATE: 08/12/09 TIME: 10:00 AM

TO BE COMPLETED BY VENDOR

INFORMATION IN THIS SECTION SHOULD BE PROVIDED, AS APPROPRIATE. BID RESPONSE  
MUST BE IN INK OR TYPED WITH ORIGINAL SIGNATURE AND NOTARIZATION.

1. DELIVERY: CAN BE MADE \_\_\_\_\_ DAYS OR \_\_\_\_\_ WEEKS AFTER RECEIPT OF ORDER
2. TERMS: \_\_\_\_\_(DISCOUNTS ARE TAKEN WITHOUT REGARD TO DATE OF PAYMENT.)
3. PRICE VALID FOR ACCEPTANCE WITHIN \_\_\_\_\_ DAYS.
4. VENDOR QUOTATION REFERENCE NUMBER, IF ANY: \_\_\_\_\_  
(THIS NUMBER WILL APPEAR ON THE PURCHASE ORDER.)
5. E-MAIL ADDRESS: \_\_\_\_\_  
INTERNET WEBSITE: \_\_\_\_\_
6. GENERAL CONTRACTOR'S LICENSE NO: \_\_\_\_\_  
TYPE OF G.C. LICENSE: \_\_\_\_\_  
RETURN INVITATION TO BID:

US MAIL

STATE OF ALABAMA  
DEPARTMENT OF FINANCE  
DIVISION OF PURCHASING  
P O BOX 302620  
MONTGOMERY, AL 36130-2620

COURIER

STATE OF ALABAMA  
DIVISION OF PURCHASING  
RSA UNION BUILDING  
100 N. UNION ST., SUITE 192  
MONTGOMERY, AL 36104

\*\*\*\*\* IMPORTANT NOTE: \*\*\*\*\*

BIDDERS MUST COMPLY WITH ALL "BID RESPONSE INSTRUCTIONS" ON PAGE 2, TO INCLUDE  
ITEM 7 - COPY REQUIREMENT.

SIGNATURE AND NOTARIZATION REQUIRED

I HAVE READ THE ENTIRE BID AND AGREE TO FURNISH EACH ITEM OFFERED AT THE PRICE QUOTED.  
I HERBY AFFIRM I HAVE NOT BEEN IN ANY AGREEMENT OR COLLUSION AMONG BIDDERS IN  
RESTRAINT OF FREEDOM OF COMPETITION BY AGREEMENT TO BID AT A FIXED PRICE OR TO  
REFRAIN FROM BIDDING.

SWORN TO AND

FEIN OR SSN

AUTHORIZED SIGNATURE (INK)

SUBSCRIBED BEFORE ME THIS

COMPANY NAME

TYPE/PRINT AUTHORIZED NAME

\_\_\_\_\_ DAY OF \_\_\_\_\_

MAIL ADDRESS

TITLE

NOTARY PUBLIC

CITY, STATE, ZIP

TOLL FREE NUMBER

TERM EXP: \_\_\_\_\_

PHONE INCLUDING AREA CODE

FAX NUMBER

STANDARD TERMS & CONDITIONS

VENDOR NAME :

VENDOR NUMBER: -

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INVITATION TO BID

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AUTHORITY:

THE DEPARTMENT OF FINANCE CODE OF ADMINISTRATIVE PROCEDURE, CHAPTER 355-4-1 EFFECTIVE DECEMBER 20, 2001 IS INCORPORATED BY REFERENCE AND MADE A PART OF THIS DOCUMENT. TO RECEIVE A COPY CALL (334)242-7250, OR OUR WEBSITE WWW.PURCHASING.ALABAMA.GOV .

INFORMATION AND ASSISTANCE TO MINORITY BUSINESSES IN THE TECHNICAL COMPLETION OF REQUIRED FORMS MAY BE OBTAINED FROM THE OFFICE OF MINORITY BUSINESS ENTERPRISE, 1-800-447-4191.

BID (ITB) RESPONSE INSTRUCTIONS

REV: 04/07/09

1. TO SUBMIT A RESPONSIVE BID, READ THESE INSTRUCTIONS, ALL TERMS, CONDITIONS AND SPECIFICATIONS.
2. BID ENVELOPES/PACKAGES/BOXES MUST BE IDENTIFIED ON FRONT, PREFERABLY LOWER LEFT CORNER AND BE VISIBLE WITH THE BID NUMBER AND OPENING DATE. EACH INDIVIDUAL BID (IDENTIFIED BY A UNIQUE BID NUMBER) MUST BE SUBMITTED IN A SEPERATE ENVELOPE. RESPONSES TO MULTIPLE BID NUMBERS SUBMITTED IN THE SAME ENVELOPE/COURIER PACKAGE, THAT ARE NOT IN SEPARATE ENVELOPES PROPERLY IDENTIFIED, WILL BE REJECTED. THE DIVISION OF PURCHASING DOES NOT ASSUME RESPONSIBILITY FOR LATE BIDS FOR ANY REASON INCLUDING THOSE DUE TO POSTAL, OR COURIER SERVICE. BID RESPONSES MUST BE IN THE DIVISION OF PURCHASING OFFICE PRIOR TO THE "RECEIVE DATE AND TIME" INDICATED ON THE BID.
3. BID RESPONSES (PAGE 1, PRICE SHEET AND ADDENDUMS (WHEN SIGNATURE IS REQUIRED)) MUST BE IN INK OR TYPED ON THIS DOCUMENT. OR EXACT FORMAT WITH SIGNATURES BEING HANDWRITTEN ORIGINALS IN INK (PERSON SIGNING BID, NOTARY, AND NOTARY EXPIRATION), OR THE BID WILL BE REJECTED. UNLESS INDICATED IN THE BID, ALL PRICE PAGES MUST BE COMPLETED AND RETURNED. IF AN ITEM IS NOT BEING BID, IDENTIFY IT AS NB (NO-BID). PAGES SHOULD BE SECURED. THE DIVISION OF PURCHASING DOES NOT ASSUME RESPONSIBILITY FOR MISSING PAGES. FAXED BID RESPONSES WILL NOT BE ACCEPTED.
4. THE UNIT PRICE ALWAYS GOVERNS REGARDLESS OF THE EXTENDED AMOUNT. A UNIT PRICE CHANGE ON A LINE MUST BE INITIALED BY THE PERSON SIGNING THE BID, OR THAT LINE WILL BE REJECTED. THIS INCLUDES A CROSS-OUT, STRIKE-OVER, INK-OVER, WHITE-OUT, ERASURE, OR ANY OTHER METHOD CHANGING THE PRICE.
5. A "NO BID" MUST BE RETURNED TO REMAIN ON A CLASS/SUBCLASS. RETURN PAGE 1 MARKED "NO-BID". IDENTIFY IT ON THE ENVELOPE AS A "NO-BID". FAILING TO RESPOND TO 3 ITB'S WITHIN THE SAME CLASS/SUBCLASS WILL AUTOMATICALLY PURGE THE VENDOR FROM THAT CLASS/SUBCLASS. RESPONDING WITH 6 "NO-BIDS" WITHIN THE SAME CLASS/SUBCLASS WILL AUTOMATICALLY PURGE THE VENDOR FROM THAT CLASS/SUBCLASS. A "NO-BID" RECEIVED LATE IS CONSIDERED A NO RESPONSE.
6. THE DIVISION OF PURCHASING IS NOT RESPONSIBLE FOR MISINTERPRETATION OF DATA FAXED FROM THIS OFFICE.
7. THE DIVISION OF PURCHASING REQUIRES AN ORIGINAL AND A MINIMUM OF ONE COMPLETE EXACT COPY (TO INCLUDE SIGNATURE AND NOTARY) OF THE INVITATION-TO-BID RESPONSE. THE ORIGINAL AND THE COPY SHOULD BE SUBMITTED TOGETHER AS A BID PACKAGE.
8. AN IMPROPERLY SUBMITTED BID, LATE BID, OR BID THAT IS CANCELLED ON OR BEFORE THE OPENING DATE WILL BE HELD FOR 90 DAYS AND THEN DESTROYED. THE BID MUST BE RETRIEVED DURUIG REGULAR WORK HOURS, MONDAY - FRIDAY, EXCEPT STATE HOLIDAYS. AFTER THE BID IS DESTROYED, THE DIVISION OF PURCHASING ASSUMES NO RESPONSIBILITY FOR THE DOCUMENT.

DISQUALIFIED/CANCELLED BID

BIDS THAT ARE IMPROPERLY SUBMITTED OR RECEIVED LATE WILL BE A RESPONSE FOR RECORD, BUT WILL NOT BE RETURNED OR A NOTIFICATION MAILED.

THE FOLLOWING IS A PARTIAL LIST WHEREBY A BID RESPONSE WILL BE DISQUALIFIED:

BID NUMBER NOT ON FACE OF ENVELOPE/COURIER PACKAGE/BOX  
RESPONSES TO MULTIPLE BID NUMBERS IN SAME ENVELOPE NOT PROPERLY IDENTIFIED  
BID RECEIVED LATE  
BID NOT SIGNED/NOT ORIGINAL SIGNATURE  
BID NOT NOTARIZED/NOT ORIGINAL SIGNATURE OF NOTARY AND/OR NO NOTARY EXPIRATION  
NOTARIZED OWN SIGNATURE  
REQUIRED INFORMATION NOT SUBMITTED WITH BID  
FAILURE TO SUBMIT THE ORIGINAL BID AND A COMPLETE EXACT COPY WILL RESULT IN REJECTION OF THE BID RESPONSE  
FAILURE TO MARK RESPONSES AS "ORIGINAL" AND/OR "COPY" COULD RESULT IN THE ENTIRE BID RESPONSE BEING REJECTED

CERTIFICATION PURSUANT TO ACT NO. 2006-557

ALABAMA LAW (SECTION 41-4-116, CODE OF ALABAMA 1975) PROVIDES THAT EVERY BID SUBMITTED AND CONTRACT EXECUTED SHALL CONTAIN A CERTIFICATION THAT THE VENDOR, CONTRACTOR, AND ALL OF ITS AFFILIATES THAT MAKE SALES FOR DELIVERY INTO ALABAMA OR LEASES FOR USE IN ALABAMA ARE REGISTERED, COLLECTING, AND REMITTING ALABAMA STATE AND LOCAL SALES, USE, AND/OR LEASE TAX ON ALL TAXABLE SALES AND LEASES INTO ALABAMA. BY SUBMITTING THIS BID, THE BIDDER IS HEARBY CERTIFYING THAT THEY ARE IN FULL COMPLIANCE WITH ACT NO. 2006-557, THEY ARE NOT BARRED FROM BIDDING OR ENTERING INTO A CONTRACT PURSUANT TO 41-4-116, AND ACKNOWLEDGES THAT THE AWARDING AUTHORITY MAY DECLARE THE CONTRACT VOID IF THE CERTIFICATION IS FALSE.

SPECIAL TERMS & CONDITIONS

VENDOR NAME :

VENDOR NUMBER: -

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INVITATION TO BID

#### INTENT TO AWARD

EFFECTIVE MAY 1, 2008, THE STATE OF ALABAMA - DIVISION OF PURCHASING WILL ISSUE AN 'INTENT TO AWARD' BEFORE A FINAL AWARD IS MADE. THE 'INTENT TO AWARD' WILL CONTINUE FOR A PERIOD OF FIVE (5) CALENDAR DAYS, AFTER WHICH A PURCHASE ORDER WILL BE PRODUCED. UPON FINAL AWARD, ALL RIGHTS TO PROTEST ARE FORFEITED. A DETAILED EXPLANATION OF THIS PROCESS MAY BE REVIEWED IN THE ALABAMA ADMINISTRATIVE CODE - CHAPTER 355-4-1(14).

#### ALTERNATE BID RESPONSE

UNLESS STATED ELSEWHERE IN THIS INVITATION-TO-BID (ITB) THE STATE OF ALABAMA WILL ACCEPT AND EVALUATE ALTERNATE BID SUBMITTALS ON ANY ITB'S. ALTERNATE BID RESPONSES WILL BE EVALUATED ACCORDING TO THE REQUIREMENTS AS ALL OTHER RESPONSES TO THIS ITB.

#### INTERNET WEBSITE LINK'S

INTERNET AND/OR WEBSITE LINKS WILL NOT BE ACCEPTED IN BID RESPONSES AS A MEANS TO SUPPLY ANY REQUIREMENTS STATED IN THIS ITB (INVITATION-TO-BID).

#### PRODUCT DELIVERY, RECEIVING AND ACCEPTANCE

IN ACCORDANCE WITH THE UNIVERSAL COMMERCE CODE (CODE OF ALABAMA, TITLE 7), AFTER DELIVERY, THE STATE OF ALABAMA HAS THE RIGHT TO INSPECT ALL PRODUCTS BEFORE ACCEPTING. THE STATE WILL INSPECT PRODUCTS IN A REASONABLE TIMEFRAME. SIGNATURE ON A DELIVERY DOCUMENT DOES NOT CONSTITUTE ACCEPTANCE BY THE STATE. THE STATE WILL ACCEPT PRODUCTS ONLY AFTER SATISFACTORY INSPECTION.

#### SALES TAX EXEMPTION

PURSUANT TO THE CODE OF ALABAMA, 1975, TITLE 40-23-4 (A) (11), THE STATE OF ALABAMA IS EXEMPT FROM PAYING SALES TAX. AN EXEMPTION LETTER WILL BE FURNISHED UPON REQUEST.

#### INVOICES

INQUIRIES CONCERNING PAYMENT AFTER INVOICES HAVE BEEN SUBMITTED ARE TO BE DIRECTED TO THE RECEIVING AGENCY, NOT THE DIVISION OF PURCHASING

#### BID RESPONSES AND BID RESULTS

UNEVALUATED BID RESPONSES (NOT BID RESULTS) ARE AVAILABLE ON OUR WEB SITE AT WWW.PURCHASING.ALABAMA.GOV. BID RESULTS WILL BE MADE AVAILABLE FOR REVIEW IN THE DIVISION OF PURCHASING OFFICE, BUT ONLY AFTER THE BID HAS BEEN AWARDED. WE DO NOT FAX OR MAIL COPIES OF BID RESULTS. IF A VENDOR WISHES TO REVIEW BID RESULTS IN OUR OFFICE, THEY SHOULD FAX THEIR REQUEST TO REVIEW THE BID TWO DAYS IN ADVANCE TO THE "BID REVIEW CLERK" AT (334) 242-4419. BE SURE TO REFERENCE THE BID NUMBER.

#### FOREIGN CORPORATION - CERTIFICATE OF AUTHORITY

ALABAMA LAW PROVIDES THAT A FOREIGN CORPORATION (AN OUT-OF-STATE COMPANY/FIRM) MAY NOT TRANSACT BUSINESS IN THE STATE OF ALABAMA UNTIL IT OBTAINS A CERTIFICATE OF AUTHORITY FROM THE SECRETARY OF STATE. SECTION 10-2B-15.01, CODE OF ALABAMA 1975. TO OBTAIN FORMS FOR A CERTIFICATE OF AUTHORITY, CONTACT THE SECRETARY OF STATE, CORPORATIONS DIVISION, (334) 242-5324. THE CERTIFICATE OF AUTHORITY DOES NOT KEEP THE VENDOR FROM SUBMITTING A BID.

#### BID IDENTIFICATION

REFERENCE PAGE 2, ITEM 2. DUE TO THE POSTAL SERVICE PUTTING BAR CODE LABELS ON ENVELOPES, IT CONCEALS THE BID NUMBER AND DATE IF THE VENDOR HAS WRITTEN THEM OTHER THAN THE LOWER LEFT CORNER, THEREFORE THE BID WOULD BE REJECTED FOR NOT BEING PROPERLY IDENTIFIED.

SPECIAL TERMS & CONDITIONS

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INVITATION TO BID

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AWARD:

AWARD WILL BE MADE "ALL OR NONE" TO THE LOWEST RESPONSIBLE BIDDER  
MEETING ALL SPECIFICATIONS.

F.O.B. DESTINATION:

F.O.B. DESTINATION IS THE LOCATION WHERE MERCHANDISE IS DELIVERED AND  
UNLOADED ON A RECEIVING DOCK, IF AVAILABLE, TO ANY STATE OR LOCAL  
GOVERNMENT AGENCY AND THE CHANGE OF TITLE TAKES PLACE. THE VENDOR IS  
LIABLE FOR FREIGHT CHARGES, RISK OF LOSS OR DAMAGE TO THE MERCHANDISE  
UP TO THE DESTINATION.

FREIGHT CHARGES ARE TO BE INCLUDED IN PRICING  
DO NOT SHOW FREIGHT AS A SEPARATE CHARGE

PRORATION:

ANY PROVISION OF A CONTRACT RESULTING FROM THIS BID TO THE CONTRARY  
NOTWITHSTANDING, IN THE EVENT OF FAILURE OF THE STATE TO MAKE PAYMENT  
HEREUNDER AS A RESULT OF PARTIAL UNAVAILABILITY, AT THE TIME SUCH  
PAYMENT IS DUE, OF SUCH SUFFICIENT REVENUES OF THE STATE TO MAKE SUCH  
PAYMENT (PRORATION OF APPROPRIATED FUNDS FOR THE STATE HAVING BEEN  
DECLARED BY THE GOVERNOR PURSUANT TO SECTION 41-4-90 OF THE CODE OF  
ALABAMA 1975), THE CONTRACTOR SHALL HAVE THE OPTION, IN ADDITION TO  
THE OTHER REMEDIES OF THE CONTRACT, OF RENEGOTIATING THE CONTRACT  
(EXTENDING OR CHANGING PAYMENT TERMS OR AMOUNTS) OR TERMINATING THE  
CONTRACT.

DESCRIPTIVE LITERATURE:

THE BRANDS AND MODEL NUMBERS REFERENCED PROVIDE A LEVEL OF QUALITY,  
AND UNLESS OTHERWISE SPECIFIED, ARE NOT RESTRICTIVE. VENDORS BIDDING  
ALTERNATE ITEMS MUST PROVIDE COMPLETE DESCRIPTIVE/TECHNICAL LITERATURE  
FOR CONSIDERATION AND EVALUATION WITH THEIR BID, AND WITH THE BID COPY  
PER ITEM NUMBER 7 ON PAGE 2. REFERENCE TO LITERATURE WITH A PREVIOUS  
BID WILL NOT SATISFY THIS REQUIREMENT. FAILURE TO PROVIDE THE  
REQUIRED LITERATURE WILL RESULT IN THE REJECTION OF THE BID.  
PHYSICAL INSPECTION AND OPERATIONAL EVALUATION MAY ALSO BE  
REQUIRED WITHOUT COST OR OBLIGATION TO THE STATE OF ALABAMA.

REQUESTED INFORMATION:

ANY ADDITIONAL INFORMATION REQUESTED FROM A VENDOR MUST BE FURNISHED  
WITHIN THREE (3) DAYS FROM RECEIPT OF REQUEST.

EMAIL QUESTIONS TO:

PAT.ANTLE@PURCHASING.ALABAMA.GOV

## PRICE SHEET

VENDOR NAME :

VENDOR NUMBER: -

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## INVITATION TO BID

OPEN DATE : 08/12/09 TIME: 10:00 AM

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LINE NO.	COMMODITY/SERVICE DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
UNLESS SPECIFIED OTHERWISE BELOW: SHIP TO: 012035 / 012M01 ALA DEPT OF TRANS - 6TH DIVISION DIVISION ENGINEER P.O.BOX 8008 1525 COLISEUM BLVD MONTGOMERY AL 36130					
00001	COMMODITY CODE: 840-84-083381 3930 SERIES I-VIEW COLOR DAY/NIGHT DSP CAMERA INTEGRATED INTO IP67 HEATED 3.5" DIAMETER HOUSING SYSTEM WITH SUNSHIELD, 24VAC OR 120VAC OPERATING POWER, 35X NTSC DAY/NIGHT EIS CAMERA PER SPECIFI- CATIONS ATTACHED TO INVITATION TO BID 09-R-2208649	5	EACH		
MFR: MODEL: MFR: COHU MODEL: 3935-5100 OR EQUAL					
!!!!!!! VENDORS TAKE NOTICE !!!!!!!! STATE PURCHASING REQUIRES AN ORIGINAL BID AND ONE COMPLETE COPY OF THE BID. FAILURE TO DO SO AS SPECIFIED ON PAGE TWO (2) OF THIS INVITATION TO BID WILL RESULT IN THE REJECTION OF YOUR BID. !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!					
00002	COMMODITY CODE: 840-84-083381 CABLE, CAMERA 3930 TO 115VAC PLUG, BNC VIDEO AND RS422 DB9F, WITH A CABLE LENGTH OF 75 FEET PER SPECIFICATIONS ATTACHED TO INVITATION TO BID 09-R- 2208649	5	EACH		
MFR: MODEL: MFR: COHU MODEL: CA298A OR EQUAL					
00003	COMMODITY CODE: 840-84-083381 PEDESTAL MOUNT FOR MAST ARM INSTALLATION WITH ADJUSTABLE HEAD PER SPECIFICATIONS ATTACHED TO INVITATION TO BID 09-R- 2208649	5	EACH		
MFR: MODEL: MFR: COHU MODEL: 7411498-001 OR EQUAL					
00005	COMMODITY CODE: 840-84-083381 CABLE, CAMERA CAM MS CONN TO 12VDC, VIDEO BNC AND RS232 D9, WITH A CABLE LENGTH OF 80 FEET PER SPECIFICATIONS ATTACHED TO INVITATION TO BID 09-R- 2208649	7	EACH		
MFR: MODEL: MFR: COHU MODEL NO.: CA253B OR EQUAL					

PAGE TOTAL

PRICE SHEET

VENDOR NAME :

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INVITATION TO BID

LINE NO.	COMMODITY/SERVICE DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
00006	COMMODITY CODE: 840-84-083381 3230 SERIES IP67 ENVIRONMENTAL CAMERA SYSTEM, 12VDC OPERATING POWER, NTSC DAY/NIGHT 30X OPTICAL ZOOM, MAST ARM POLE MOUNT PER SPECIFICATIONS ATTACHED TO INVITATION TO BID 09-R-2208649  MFR: _____ MODEL: _____ MFR: COHU MODEL: 3232-3000/MAST OR EQUAL	7	EACH	_____	_____

PAGE TOTAL

BID TOTAL

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# **Video Camera Specifications**

## **Fixed Position Camera**

**IP67 / 35X Optical Zoom Requirement**

### **Alabama DOT Qualified Products List**

**April 2009**

Alabama Department of Transportation  
Fixed Position Camera  
ARCHITECTURAL AND ENGINEERING SPECIFICATION  
April 2009

Fixed Position Camera

1.01 MANUFACTURER

- A. The specified product shall be manufactured by a firm whose quality system is in compliance with the I.S./ISO 9001/EN 29001, QUALITY SYSTEM.

2.02 SYSTEM DESCRIPTION

- A. The specified product herein shall be a high quality IP67 video camera system (VCS) integrating high resolution day/night camera technology with hi-power zoom lens optics, housed within a sealed and dry nitrogen pressurized enclosure package with a sunshield cover.
- B. The (VCS) shall include an advanced ID generator for displaying camera site, preset and maintenance status information on the video image.
- C. The (VCS) system shall include multiple camera manufacture communication protocols without using additional plug-in converter modules.
- D. The (VCS) shall allow for a unique non-volatile device address range from 1 to 223 configurable thru serial communication using a graphical user interface. Hardware type settings are not acceptable.
- E. The (VCS) shall be designed for use in harsh operational environments conforming to NEMA TS2 requirements for temperature range, power variations, shock and vibration as well as IP67 environmental standards.
- F. The (VCS) shall be fully assembled, tested and pressurized at the original manufacturing facility and shipped as a complete unit.

2.03 PRODUCT SPECIFICATIONS

The IP67 camera system shall meet or exceed the following design and performance specifications.

A. CAMERA MODULE

- 1. Image Sensor: Interline transfer Progressive Scan Sony Ex-View CCD with mosaic-type color compensating filter.
- 2. Sensor Size:  $\frac{1}{4}$ " Format 3.6mm (H) x 2.7mm (V)
- 3. Image Resolution: 540 horizontal; 350 vertical
- 4. Picture Elements (total) 811 (H) x 508 (V)
- 5. Video Output: NTSC, 1 V p-p @ 75 ohms, unbalanced.
- 6. Maximum Lens Aperture: f/1.4 (wide) to f/4.2 (tele)
- 7. Optical Zoom Range: 35X, 3.4mm to 119mm
- 8. Digital Zoom Range: 1X (Off) through 12X, Smooth transition from Optical to Digital Zoom
- 9. Effective Digital Focal Length: 119mm to 1190mm



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Fixed Position Camera  
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10. Optical Zoom Speed: Two speeds, from approximately 2.9 seconds to 5.8 seconds full range
11. Horizontal Angle of View: Optical: 55.8° to 1.7°; At 10X Digital: 55.8° to 0.17°.
12. Minimum Focus Distance: 40" in tele, 0.4" in wide angle.
13. Electronic Stabilization: Two-motion-frequency (5Hz or 16Hz) selectable stabilization method
14. Auto Focus: Selectable Auto/Manual; Minimum Scene Illumination for Reliable Auto Focus, 30% video
15. Manual Focus Speed: One speed, approximately 2.0 seconds to full range
16. Long Term Integration Range: Shall provide manual selection of integration duration for enhanced sensitivity. Integration times shall be 1/2 second, 1/4 second, 1/8 second, 1/15 second or 1/30 second. Frame Store video output provides continuous video output, updated at the integration rate.
17. Manual Shutter: Selectable shutter speeds shall be 1/60; 1/120; 1/180; 1/250; 1/500; 1/1,000; 1/2,000; 1/4,000; 1/10,000; 1/30,000 second
18. Auto Iris; Iris shall automatically adjust to compensate for changes in scene illumination to maintain constant video level output within sensitivity specifications.
19. Gamma: 0.45
20. AGC: 0 to 28 dB
21. Color Balance: Auto Tracking Color balance/Manual with adjustable Red and Blue Levels
22. Signal to Noise Ratio: >50 dB
23. Synchronization: Crystal or Phase-Adjust Line Lock on 60Hz.
24. Sensitivity: Scene Illumination @ F1.4
  - a. 1.0 Lux @ 1/60 shutter, color mode
  - b. 0.1 Lux @ 1/4 shutter, color mode
  - c. 0.01 Lux @ 1/4 shutter, mono mode

C. OPERATIONAL

1. Presets; Minimum of 64, with each preset consisting of a zoom and focus coordinate.
2. Camera Site ID: Provide up to 2 lines of up to 24 ASCII characters each on video for user site description ID. If both lines are programmed, line 1 of ID shall always appear above line 2 regardless of top or bottom selection
3. Messages can be positioned at either the top or the bottom of display.
3. Low Pressure Indicator: Provide "Low Pressure" ID message on video for indication insufficient pressure in (VCS).

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Fixed Position Camera  
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- a. Message can be displayed in "blinking" or "non-blinking" mode
- b. Message shall be enabled or disabled by user
- c. Provide user threshold set points for variations in altitudes.
4. Internal Temperature Indicator: 1 line, in degrees C numeric messages can be displayed in "blinking" or "non-blinking" mode. Message shall be enabled or disabled.
5. Flash Memory: Update firmware and new features via RS422 serial communication channel.

G. I/O AND COMMUNICATION SIGNALS

1. Video; Provide for one analog 1 Vp-p unbalanced 75-ohm video output.
2. Control Data: Provide one (1) half duplex 4-wire RS422 channel for setup and system camera control functions.
  - a. Protocol; The (VCS) shall provide Cohu, Pelco D, A/D, Vicon, and Bosch as a minimum, without using additional plug-in option cards.
  - b. The (VCS) shall allow for up to 223 addresses, or the address range that the selected protocol supports.
  - c. Transients; Provide minimum of two levels of protection with use of transorb and opto-isolated data transmission circuits.
3. Upon receipt of any given command, the camera shall not take longer than 1.0 second to respond.
4. All programmable functions shall be stored in non-volatile memory and shall not be lost if a power failure occurs.

H. POWER INPUT

The (VCS) system shall fully comply with and include independent laboratory test results confirming compliance with the following electrical operating conditions:

1. Power Consumption; <16 Watts Maximum
2. Operating Voltage; Per NEMA-TS2 para 2.1.2 and 2.1.3, 89 to 135Vac +/-3hz
  - a. 24Vac shall be available on separate pins of the 18-pin connector.

I. MECHANICAL

1. Connectors: 18 Pin MS style PT06E-14-18S (SR) weatherproof non-corrosion type or equal
2. Weight; Maximum 5.5lbs
3. Dimensions: The (VCS) with sunshield shall be no larger than 15.0" long x 5" High x 5" wide.

Alabama Department of Transportation  
Fixed Position Camera  
ARCHITECTURAL AND ENGINEERING SPECIFICATION  
April 2009

4. Construction; Powder Coated extruded aluminum; all internal and external parts corrosion protected, stainless steel fasteners.
5. Camera Mount; Five threaded  $\frac{1}{4}$ " x 20 with 1" center and 1.75" center-to-center hole spacing.

J. **ENVIRONMENTAL**

The camera system shall fully comply with the following environmental operating conditions:

1. Temperature; Per Nema-TS2 para 2.1.5, -34C to 74C tested across low and high voltage ranges per Nema-TS2 para 2.1.2 and 2.1.3.
2. Vibration: Per Nema-TS2 para 2.1.9, 2.2.3, 5-30Hz sweep @ 0.5g applied in each of 3 mutually perpendicular planes.
3. Shock: Per Nema-TS2 para 2.1.10, 2.2.4, 10g applied in each of 3 mutually perpendicular planes.
4. Water Spray: Per IEC 60529+A1, 1999, Para 14.2.6, Solid water stream delivered thru 12.5mm nozzle @ 25 gallons/minute @ 9ft for 3 minutes
5. External Icing: Per Nema-TS2 250-2003, para. 5.6
6. Corrosion Protection; Per Nema 250-2003, para 5.10
7. Humidity; 0-100% N.C per MIL-E-5400T, para 3.2.24.4
8. Standards; IP66, IP67, ASTM-B117 Marine

Formatted: Bullets and Numbering

H. **CERTIFICATIONS**

1. Safety: CE
2. Emissions; FCC Class A

# **Day/Night Video Camera Specifications**

**Fixed Position Camera  
IP67 With 30X Optical Zoom Requirement**

**Alabama DOT  
Qualified Products List**

**March 2009**

**PRODUCTS****2.01 MANUFACTURER**

- A. The specified product shall be manufactured by a firm whose quality system is in compliance with the I.S./ISO 9001/EN 29001, QUALITY SYSTEM.

**2.02 SYSTEM DESCRIPTION**

- A. The camera system specified herein shall be a high quality camera system integrating high-resolution day/night camera technology with hi-power zoom lens optics, enclosed within a sealed and pressurized IP67 rated housing.
- B. The camera shall be designed for use in adverse operational environments.
- C. Communications protocol command set shall be public domain. The camera unit shall be fully assembled and tested at the original manufacturing facility and shipped as a complete unit.

**2.03 PRODUCT SPECIFICATIONS**

The camera shall meet or exceed the following design and performance specifications.

**A. CAMERA MODULE**

1. Image Sensor: Interline transfer Sony Ex-View CCD with mosaic-type color compensating filter.
2. Image Size: 1/4" Format 3.6mm (H) x 2.7mm (V) x 4.5mm
3. Image Resolution: 480 horizontal; 350 vertical Picture Elements (total) 811 (H) x 508 (V)
4. Video Output: NTSC, 1 V p-p @ 75 ohms, unbalanced.
5. Maximum Lens Aperture: f/1.6 (wide) to f/3.2 (tele)
6. Optical Zoom Range: 30X, 3.3mm to 99mm (+/-10%)
7. Digital Zoom Range: 1X (Off) through 10X, Smooth transition from Optical to Digital Zoom
8. Effective Digital Focal Length: 99mm to 990mm (+/-10%)
9. Optical Zoom Speed: Two speeds, from approximately 6.0 seconds to 16.0 seconds full range
10. Horizontal Angle of View: Optical: 58.0° to 2.2°; at 10X Digital: 58.0° to 0.22°.
11. Minimum Focus Distance: Default is 130cm (33"), Selectable distances of 10cm (3.9"), 50cm (19.7"), 80cm (130cm (31.5"), 2m (78.8"), 4m (157.6").
12. Auto Focus: Selectable Auto/Manual; Minimum Scene Illumination for Reliable Auto Focus; 50% video
13. Manual Focus Speed: One speed, approximately 5.0 seconds to full range
14. Selectable Long Term Integration Limit: Shall provide selection of the maximum integration duration for enhanced sensitivity. While long-term integration is active, Frame Store video output provides continuous video output, updated at the integration rate. The maximum Long Term Integration time shall be selectable from
  - a. Approximately 1/30 second (2 fields)
  - b. Approximately 1/15 second (4 fields)
  - c. Approximately 1/8 second (8 fields)
  - d. Approximately 1/5 second (12 fields)
  - e. Approximately 1/4 second (16 fields)
  - f. Approximately 1/2 second (32 fields)
  - g. Approximately 1 second (64 fields)
  - h. Approximately 2 seconds (128 fields)

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15. Manual Shutter: Selectable shutter speeds shall be 1/60; 1/125; 1/250; 1/500; 1/1,000; 1/2,000; 1/4,000; 1/10,000
16. Auto Iris; Iris shall automatically adjust to compensate for changes in scene illumination to maintain constant video level output within sensitivity specifications.
17. Gamma: 0.45
18. Color Balance: Auto Tracking Color balance/Manual with adjustable Red and Blue Levels
19. Signal to Noise Ratio: >48 dB
20. Synchronization: Crystal
21. Sensitivity: Scene Illumination, Day Mode (color) 30 IRE
  - a. 1.0 Lux @ 1/60 shutter,
  - b. 0.05 Lux @ 1/4 sec shutter
22. Sensitivity: Scene Illumination, Night Mode (Mono) 30 IRE
  - a. 0.2 Lux @ 1/60 shutter
  - b. 0.01 Lux @ 1/4 sec shutter
  - c. 0.001 Lux @ 2 seconds integration (128 fields)

### B. OPERATIONAL

1. Addressing: 256 Programmable Addresses, 0 through 255 with "find address" capability.
2. Presets: 167 Zoom and Focus Presets
3. Camera Site ID: Provide up to 10 characters for user site description ID, displayed on lower left of image.
4. Day/Night Control:
  - a. Auto, Color or Monochrome Modes
5. Zoom Control Functions:
  - a. Zoom In/Out
  - b. Lens speed (Fast/Slow) setting
  - c. Zoom Range Setting (Start and End Points)
6. Digital Zoom Function:
  - a. Allow setting maximum digital zoom range mode (OFF, 2x, 5x, 10x)
7. Backlight Compensation Modes:
  - a. Normal (OFF), Level 1 or Level 2 compensation, with 5 selectable compensation areas.
8. White Balance Control:
  - a. Auto, Manual (Blue/Red), Indoor, Outdoor Modes
9. Sharpness Control
  - a. Edge sharpness control (0 to 15) where lower numbers represent softer edges
10. Mirror Image
  - a. ON/OFF, where ON Inverts image horizontally

### C. I/O SIGNALS

1. Video; Provide for one analog 1 Vp-p unbalanced 75-ohm video output.
2. RS422 Control Data; Provide one (1) half duplex 4 wire RS422 channel for setup and system camera control functions.
  - a. Protocol; The 3220 series camera shall use a published protocol for system integration as required.
  - b. Transients; Provide minimum of two levels of protection with use of Transorbs and opto-isolated data transmission circuits.
  - c. Baud Rate; 9600
  - d. Start Bit; 1
  - e. Stop Bit; 1

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- f. Data Bits; 8
- g. Parity; None
- 3. RS232C Control Data; Provide one (1) RS232C channel for setup and system camera control functions.
  - a. Protocol; The camera shall use a published protocol for system integration as required.
  - b. Transients; Provide minimum of two levels of protection with use of Transorbs and opto-isolated data transmission circuits.
  - c. Baud Rate; 9600
  - d. Start Bit; 1
  - e. Stop Bit; 1
  - f. Data Bits; 8
  - g. Parity; None
  - h. Flow Control; XON/XOFF, RTS, CTS are not supported.

D. **POWER INPUT**

The camera shall fully comply with the following electrical operating conditions;

- 1. MODEL w/12VDC:
  - a. POWER (Without Heater Operating): 12VDC +/- 10%; 4 Watts Max
  - b. POWER (With Heater Operating): 12VDC +/- 10%; 22 Watts Max
- 2. MODEL w/24V AC/DC:
  - a. POWER (Without Heater): 24V AC/DC +/- 10%; 4 Watts Max
  - b. POWER (With Heater): 24V AC/DC +/- 10%; 22 Watts Max
- 3. MODEL w/115VAC:
  - a. POWER (Without Heater): 115VAC +/- 10%; 4 Watts Max
  - b. POWER (With Heater): 115VAC +/- 10%; 22 Watts Max

E. **MECHANICAL**

- 1. I/O: One PT06E-14-18P (SR) environmental connector located on the rear panel
- 2. Weight: 5.5 lbs maximum with sunshield, no mount.
- 3. IP67 per EN 60529
- 4. Dimensions: 8" (L) x 3.5" (W) x 4.2" (H) (w/o Sunshield)
- 5. Weight: < 5 lbs maximum with sunshield, no mount.
- 6. Construction: Construction; Powder Coated 6061 T6 aluminum; all internal and external parts corrosion protected, stainless steel external screws.
- 7. Camera Mount: Five ¼-20 mounting nuts on the bottom of the housing.

F. **ENVIRONMENTAL**

- 1. The camera system shall fully comply with and include independent laboratory test results confirming compliance with the following environmental operating conditions:
  - a. Temperature - Operating; -50C to 60C (across low to high voltage ranges)
  - b. Temperature - Start-up; -30C to 60C (across low to high voltage ranges)
  - c. Temperature - Storage; -30C to 60C
  - d. Resistant to salt-air fog (1000 hours) per EN61000-6-3, EN60065, EN50130-4
  - e. Humidity; 0-100% N.C. per MIL-E-5400T, para 3.2.24.4

G. **STANDARDS**

- 1. IP67/Nema 4X/ASTM-B117

H. **CERTIFICATIONS**

- 1. Safety; CE (Low Voltage)
- 2. Emissions; FCC Class A